

APPENDIX A

Glossary

Abiotic Compartment Type	A compartment type consisting primarily of a non-living environmental medium (<i>e.g.</i> , air, soil) for which TRIM.FaTE calculates chemical masses and concentrations; it may also contain biota, such as the microorganisms responsible for chemical transformation (see also compartment type).
Advective Process	A process by which a chemical can be transported within a given medium that is moving from one compartment to another.
Biotic Compartment Type	A compartment type consisting of a population or community of living organisms (<i>e.g.</i> , bald eagle, benthic invertebrate), or in the case of terrestrial plants, portions of living organisms (<i>e.g.</i> , stems, leaves), for which TRIM.FaTE calculates chemical masses and concentrations (see also compartment type).
Chemical	A unit whose mass is being modeled by TRIM.FaTE. A chemical can be any element or compound, or even group of compounds, assuming the necessary parameters (<i>e.g.</i> , molecular weight, diffusion coefficient in air) are defined.
Compartment	A homogeneous unit of space characterized by its physical composition within which it is assumed, for modeling purposes, that all chemical mass is in equilibrium.
Compartment Type	A specific kind of compartment, such as an air compartment type or a mule deer compartment type. Compartment types are distinguished from each other by the way they exchange chemical mass with other compartment types.
Diffusive Process	A process by which a chemical is transported from one compartment to another as a result of the magnitude and direction of the concentration differences between two compartments at the interface between the two locations.
Dispersion	The “spreading out” of a chemical during advective transport. May result in movement of the chemical perpendicular to the direction of advective flow.
Fugacity	A measure of the tendency of a substance to escape by some chemical process from the phase in which it exists.

Link	A connection that allows the transfer of chemical mass between any two compartments. Each link is implemented by an algorithm or algorithms that mathematically represent the mass transfer.
Model Evaluation	The broad range of review, analysis, and testing activities designed to examine and build consensus about a model's performance.
Modeling Region	The region of space through which the transport and transformation of the modeled chemical(s) is estimated.
Output Time Step	A length of time over which the compartment masses and concentrations calculated at each simulation time step are summarized and reported by the model.
Parameter	A model input that defines a variable in an algorithm (<i>e.g.</i> , emission rate, half-life, biomass).
Parcel	A planar (<i>i.e.</i> , two dimensional) geographical area used to subdivide a modeling region. Parcels, which can be virtually any size or shape, are the basis for defining volume elements. There can be air, land, and surface water parcels.
Scenario	A specified set of conditions (<i>e.g.</i> , spatial, temporal, environmental, source, chemical) used to define a model setup for a particular simulation or set of simulations.
Sensitivity	The rate of change of the model output with respect to changes in an input parameter.
Simulation	A single application of a model to estimate environmental conditions, based on a given scenario and any initial input values needed.
Simulation Period	The entire length of time for which the model is run and compartment masses and concentrations are calculated – in other words, the time period from the beginning of the simulation until the end.
Simulation Time Step	The time increment at which the model calculates (and re-calculates iteratively throughout the simulation period) a new inventory of compartment masses and concentrations.
Source	An external component that introduces chemical mass directly into a compartment.

Uncertainty	The lack of knowledge regarding the actual values of model input variables (parameter uncertainty) and of physical systems (model uncertainty).
Variability	The diversity or heterogeneity in a population or parameter; sometimes referred to as natural variability.
Volume Element	A bounded three-dimensional space that defines the location of one or more compartments. This term is introduced to provide a consistent method for organizing objects that have a natural spatial relationship.

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